

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1 - 51 (Canceled)

52. (Currently Amended) A kit for treating cancer, comprising a peptide or peptidomimetic targeting moiety that binds to  $\alpha_5\beta_1$  receptor, and a chelator, wherein the targeting moiety is bound to the chelator and the compound has 0-1 linking groups between the targeting moiety and chelator, or a pharmaceutically acceptable salt thereof, and ~~at least one agent selected from the group consisting of~~ a chemotherapeutic agent ~~and a radiosensitizer agent~~, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier.

53. (Currently Amended) A kit according to Claim 52 wherein said kit comprises a plurality of separate containers, at least one of said containers containing ~~one or more agents selected from the group consisting of~~ a chemotherapeutic agent ~~and a radiosensitizer agent~~, or a pharmaceutically acceptable salt thereof.

54. (Original) A kit according to Claim 52, wherein the chemotherapeutic agent is selected from the group consisting of mitomycin, tretinoin, ribomustin, gemcitabine, vincristine, etoposide, cladribine, mitobronitol, methotrexate, doxorubicin, carboquone, pentostatin, nitracrine, zinostatin, cetorelix, letrozole, raltitrexed, daunorubicin, fadrozole, fotemustine, thymalfasin, sobuzoxane, nedaplatin, cytarabine, bicalutamide, vinorelbine, vesnarinone, aminoglutethimide, amsacrine, proglumide, elliptinium acetate, ketanserin, doxifluridine, etretinate, isotretinoin, streptozocin, nimustine, vindesine, flutamide, drogenil, butocin,

carmofur, razoxane, sizofilan, carboplatin, mitolactol, tegafur, ifosfamide, prednimustine, picibanil, levamisole, teniposide, improsulfan, enocitabine, lisuride, oxymetholone, tamoxifen, progesterone, mepitiostane, epitiostanol, formestane, interferon-alpha, interferon-2 alpha, interferon-beta, interferon-gamma, colony stimulating factor-1, colony stimulating factor-2, denileukin diftiox, interleukin-2, and leutinizing hormone releasing factor.

55. (Original) A kit according to Claim 52, wherein the chemotherapeutic agent is selected from the group consisting of mitomycin, tretinoin, ribomustin, gemcitabine, vincristine, etoposide, cladribine, mitobronitol, methotrexate, doxorubicin, carboquone, pentostatin, nitracrine, zinostatin, cetorelix, letrozole, raltitrexed, daunorubicin, fadrozole, fotemustine, thymalfasin, sobuzoxane, nedaplatin, cytarabine, bicalutamide, vinorelbine, vesnarinone, aminoglutethimide, amsacrine, proglumide, elliptinium acetate, ketanserin, doxifluridine, etretinate, isotretinoin, streptozocin, nimustine, vindesine, flutamide, drogenil, butocin, carmofur, razoxane, sizofilan, carboplatin, mitolactol, tegafur, ifosfamide, prednimustine, picibanil, levamisole, teniposide, improsulfan, enocitabine, and lisuride.

56. (Previously Presented) A kit according to Claim 52 wherein the chemotherapeutic agent is selected from the group consisting of oxymetholone, tamoxifen, progesterone, mepitiostane, epitiostanol, and formestane.

57. (Previously Presented) A kit according to Claim 52 wherein the chemotherapeutic agent is selected from the group consisting of interferon-alpha, interferon-2 alpha, interferon-beta,

interferon-gamma, colony stimulating factor-1, colony stimulating factor-2, denileukin diftitox, interleukin-2, and leutinizing hormone releasing factor.

58 - 65 (Canceled)

66. (Presently Presented) A method according to Claim 83 wherein the cancer is selected from the group consisting of carcinomas of the lung, breast, ovary, stomach, pancreas, larynx, esophagus, testes, liver, parotid, biliary tract, colon, rectum, cervix, uterus, endometrium, kidney, bladder, prostate, and thyroid, squamous cell carcinomas, adenocarcinomas, small cell carcinomas, melanomas, gliomas, and neuroblastomas.

67. (Previously Presented) A method according to Claim 83 wherein the chemotherapeutic agent is selected from the group consisting of mitomycin, tretinoin, ribomustin, gemcitabine, vincristine, etoposide, cladribine, mitobronitol, methotrexate, doxorubicin, carboquone, pentostatin, nitracrine, zinostatin, cetorelix, letrozole, raltitrexed, daunorubicin, fadrozole, fotemustine, thymalfasin, sobuzoxane, nedaplatin, cytarabine, bicalutamide, vinorelbine, vesnarinone, aminoglutethimide, amsacrine, proglumide, elliptinium acetate, ketanserin, doxifluridine, etretinate, isotretinoin, streptozocin, nimustine, vindesine, flutamide, drogenil, butocin, carmofur, razoxane, sizofilan, carboplatin, mitolactol, tegafur, ifosfamide, prednimustine, picibanil, levamisole, teniposide, improsulfan, enocitabine, lisuride, oxymetholone, tamoxifen, progesterone, mepitiostane, epitio stanol, formestane, interferon-alpha, interferon-2 alpha, interferon-beta, interferon-gamma, colony stimulating factor-1,

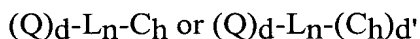
colony stimulating factor-2, denileukin diftotox, interleukin-2, and leutinizing hormone releasing factor.

68-69. (Canceled)

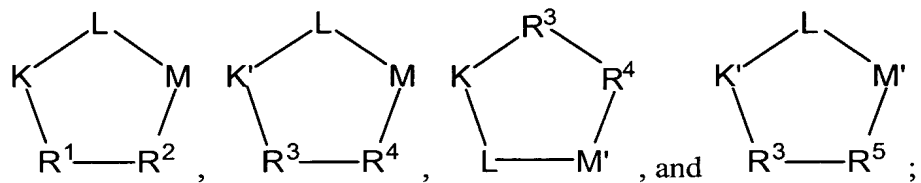
70. (Currently Amended) A composition comprising:

- (i) a metal;
- (ii) ~~at least one agent selected from the group consisting of~~ a chemotherapeutic agent ~~and a radiosensitizer agent~~, or a pharmaceutically acceptable salt thereof;
- (iii) a peptide or peptidomimetic targeting moiety that binds to  $\alpha_5\beta_1$  receptor, and a chelator, wherein the targeting moiety is bound to the chelator and the compound has 0-1 linking groups between the targeting moiety and chelator, or a pharmaceutically acceptable salt thereof; and
- (iv) a pharmaceutically acceptable carrier.

71. (Presently Presented) A composition according to Claim 70, wherein the targeting moiety, linking group, and chelator are of the formula:



wherein, Q is a peptide independently selected from the group:



K is an L-amino acid independently selected at each occurrence from the group: arginine, citrulline, N-methylarginine, lysine, homolysine, 2-aminoethylcysteine,  $\delta$ -N-2-imidazolinylnornithine,  $\delta$ -N-benzylcarbamoylnornithine, and  $\beta$ -2-benzimidazolylacetyl-1,2-diaminopropionic acid;

K' is a D-amino acid independently selected at each occurrence from the group: arginine, citrulline, N-methylarginine, lysine, homolysine, 2-aminoethylcysteine,  $\delta$ -N-2-imidazolinylnornithine,  $\delta$ -N-benzylcarbamoylnornithine, and  $\beta$ -2-benzimidazolylacetyl-1,2-diaminopropionic acid;

L is independently selected at each occurrence from the group: glycine, L-alanine, and D-alanine;

M is L-aspartic acid;

M' is D-aspartic acid;

R<sup>1</sup> is an amino acid substituted with 0-1 bonds to L<sub>n</sub>, independently selected at each occurrence from the group: glycine, L-valine, D-valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, 2-aminohexanoic acid, tyrosine, phenylalanine, thienylalanine, phenylglycine, cyclohexylalanine, homophenylalanine, 1-naphthylalanine, lysine, serine, ornithine, 1,2-diaminobutyric acid, 1,2-diaminopropionic acid, cysteine, penicillamine, and methionine;

R<sup>2</sup> is an amino acid, substituted with 0-1 bonds to L<sub>n</sub>, independently selected at each occurrence from the group: glycine, valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, 2-aminohexanoic acid, tyrosine, L-phenylalanine, D-phenylalanine, thienylalanine, phenylglycine, biphenylglycine, cyclohexylalanine, homophenylalanine, L-1-naphthylalanine, D-1-naphthylalanine, lysine, serine, ornithine, 1,2-diaminobutyric acid, 1,2-

diaminopropionic acid, cysteine, penicillamine, methionine, and 2-aminothiazole-4-acetic acid;

$R^3$  is an amino acid, substituted with 0-1 bonds to  $L_n$ , independently selected at each occurrence from the group: glycine, D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-2-aminohexanoic acid, D-tyrosine, D-phenylalanine, D-thienylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-serine, D-ornithine, D-1,2-diaminobutyric acid, D-1,2-diaminopropionic acid, D-cysteine, D-penicillamine, and D-methionine;

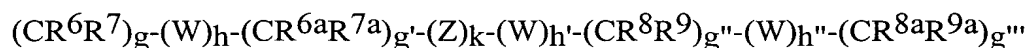
$R^4$  is an amino acid, substituted with 0-1 bonds to  $L_n$ , independently selected at each occurrence from the group: glycine, D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-2-aminohexanoic acid, D-tyrosine, D-phenylalanine, D-thienylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-serine, D-ornithine, D-1,2-diaminobutyric acid, D-1,2-diaminopropionic acid, D-cysteine, D-penicillamine, D-methionine, and 2-aminothiazole-4-acetic acid;

$R^5$  is an amino acid, substituted with 0-1 bonds to  $L_n$ , independently selected at each occurrence from the group: glycine, L-valine, L-alanine, L-leucine, L-isoleucine, L-norleucine, L-2-aminobutyric acid, L-2-aminohexanoic acid, L-tyrosine, L-phenylalanine, L-thienylalanine, L-phenylglycine, L-cyclohexylalanine, L-homophenylalanine, L-1-naphthylalanine, L-lysine, L-serine, L-ornithine, L-1,2-diaminobutyric acid, L-1,2-diaminopropionic acid, L-cysteine, L-penicillamine, L-methionine, and 2-aminothiazole-4-acetic acid;

provided that one of  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ , and  $R^5$  in each Q is substituted with a bond to  $L_n$ , further provided that when  $R^2$  is 2-aminothiazole-4-acetic acid, K is N-methylarginine, further provided that when  $R^4$  is 2-aminothiazole-4-acetic acid, K and K' are N-methylarginine, and still further provided that when  $R^5$  is 2-aminothiazole-4-acetic acid, K' is N-methylarginine;

d is selected from 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

$L_n$  is a linking group having the formula:



provided that  $g+h+g'+k+h'+g''+h''+g'''$  is other than 0;

W is independently selected at each occurrence from the group: O, S, NH, NHC(=O), C(=O)NH, C(=O), C(=O)O, OC(=O), NHC(=S)NH, NHC(=O)NH, SO<sub>2</sub>, (OCH<sub>2</sub>CH<sub>2</sub>)<sub>s</sub>, (CH<sub>2</sub>CH<sub>2</sub>O)<sub>s'</sub>, (OCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>)<sub>s''</sub>, (CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>O)<sub>t</sub>, and (aa)<sub>t'</sub>;

aa is independently at each occurrence an amino acid;

Z is selected from the group: aryl substituted with 0-3  $R^{10}$ , C<sub>3-10</sub> cycloalkyl substituted with 0-3  $R^{10}$ , and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3  $R^{10}$ ;

$R^6$ ,  $R^{6a}$ ,  $R^7$ ,  $R^{7a}$ ,  $R^8$ ,  $R^{8a}$ ,  $R^9$  and  $R^{9a}$  are independently selected at each occurrence from the group: H, =O, COOH, SO<sub>3</sub>H, PO<sub>3</sub>H, C<sub>1</sub>-C<sub>5</sub> alkyl substituted with 0-3  $R^{10}$ , aryl substituted with 0-3  $R^{10}$ , benzyl substituted with 0-3  $R^{10}$ , and C<sub>1</sub>-C<sub>5</sub> alkoxy substituted with 0-3  $R^{10}$ , NHC(=O) $R^{11}$ , C(=O)NHR<sup>11</sup>, NHC(=O)NHR<sup>11</sup>, NHR<sup>11</sup>,  $R^{11}$ , and a bond to C<sub>H</sub>;

$R^{10}$  is independently selected at each occurrence from the group: a bond to  $C_h$ ,  $COOR^{11}$ ,  $OH$ ,  $NHR^{11}$ ,  $SO_3H$ ,  $PO_3H$ , aryl substituted with 0-3  $R^{11}$ ,  $C_{1-5}$  alkyl substituted with 0-1  $R^{12}$ ,  $C_{1-5}$  alkoxy substituted with 0-1  $R^{12}$ , and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3  $R^{11}$ ;

$R^{11}$  is independently selected at each occurrence from the group: H, aryl substituted with 0-1  $R^{12}$ , a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1  $R^{12}$ ,  $C_{3-10}$  cycloalkyl substituted with 0-1  $R^{12}$ , polyalkylene glycol substituted with 0-1  $R^{12}$ , carbohydrate substituted with 0-1  $R^{12}$ , cyclodextrin substituted with 0-1  $R^{12}$ , amino acid substituted with 0-1  $R^{12}$ , polycarboxyalkyl substituted with 0-1  $R^{12}$ , polyazaalkyl substituted with 0-1  $R^{12}$ , peptide substituted with 0-1  $R^{12}$ , wherein the peptide is comprised of 2-10 amino acids, and a bond to  $C_h$ ;

$R^{12}$  is a bond to  $C_h$ ;

k is selected from 0, 1, and 2;

h is selected from 0, 1, and 2;

h' is selected from 0, 1, 2, 3, 4, and 5;

h" is selected from 0, 1, 2, 3, 4, and 5;

g is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

g' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

g" is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;



$g'''$  is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

$s$  is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

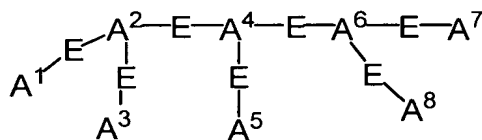
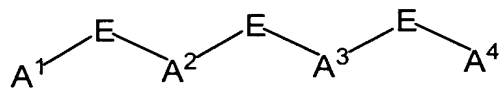
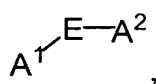
$s'$  is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

$s''$  is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

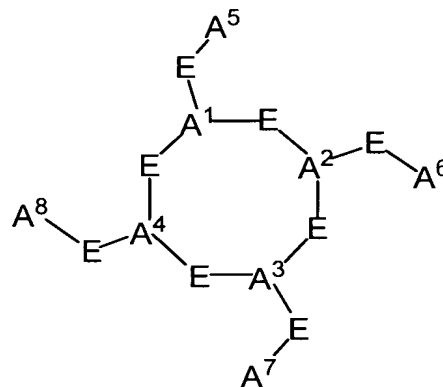
$t$  is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

$t'$  is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

$Ch$  is a metal bonding unit having a formula selected from the group:



, and



;

$A^1, A^2, A^3, A^4, A^5, A^6, A^7$ , and  $A^8$  are independently selected at each occurrence from the group N,  $NR^{13}$ ,  $NR^{13}R^{14}$ , S, SH, S(Pg), O, OH,  $PR^{13}$ ,  $PR^{13}R^{14}$ ,  $P(O)R^{15}R^{16}$ , and a bond to  $L_n$ ;

E is a bond, CH, or a spacer group independently selected at each occurrence from the group:  $C_1$ - $C_{10}$  alkyl substituted with 0-3  $R^{17}$ , aryl substituted with 0-3  $R^{17}$ ,  $C_3$ - $C_{10}$  cycloalkyl substituted with 0-3  $R^{17}$ , heterocyclo- $C_1$ - $C_{10}$  alkyl substituted with 0-3  $R^{17}$ , wherein the heterocyclo group is a 5-10 membered heterocyclic ring system containing 1-4

heteroatoms independently selected from N, S, and O, C<sub>6-10</sub> aryl-C<sub>1-10</sub> alkyl substituted with 0-3 R<sup>17</sup>, C<sub>1-10</sub> alkyl-C<sub>6-10</sub> aryl- substituted with 0-3 R<sup>17</sup>, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R<sup>17</sup>;

R<sup>13</sup>, and R<sup>14</sup> are each independently selected from the group: a bond to L<sub>n</sub>, hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl substituted with 0-3 R<sup>17</sup>, aryl substituted with 0-3 R<sup>17</sup>, C<sub>1-10</sub> cycloalkyl substituted with 0-3 R<sup>17</sup>, heterocyclo-C<sub>1-10</sub> alkyl substituted with 0-3 R<sup>17</sup>, wherein the heterocyclo group is a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O, C<sub>6-10</sub> aryl-C<sub>1-10</sub> alkyl substituted with 0-3 R<sup>17</sup>, C<sub>1-10</sub> alkyl-C<sub>6-10</sub> aryl- substituted with 0-3 R<sup>17</sup>, a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R<sup>17</sup>, and an electron, provided that when one of R<sup>13</sup> or R<sup>14</sup> is an electron, then the other is also an electron;

alternatively, R<sup>13</sup> and R<sup>14</sup> combine to form =C(R<sup>20</sup>)(R<sup>21</sup>);

R<sup>15</sup> and R<sup>16</sup> are each independently selected from the group: a bond to L<sub>n</sub>, -OH, C<sub>1</sub>-C<sub>10</sub> alkyl substituted with 0-3 R<sup>17</sup>, C<sub>1</sub>-C<sub>10</sub> alkyl substituted with 0-3 R<sup>17</sup>, aryl substituted with 0-3 R<sup>17</sup>, C<sub>3-10</sub> cycloalkyl substituted with 0-3 R<sup>17</sup>, heterocyclo-C<sub>1-10</sub> alkyl substituted with 0-3 R<sup>17</sup>, wherein the heterocyclo group is a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O, C<sub>6-10</sub> aryl-C<sub>1-10</sub> alkyl substituted with 0-3 R<sup>17</sup>, C<sub>1-10</sub> alkyl-C<sub>6-10</sub> aryl- substituted with 0-3 R<sup>17</sup>, and

a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R<sup>17</sup>;

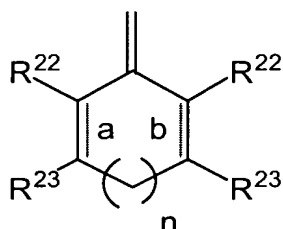
R<sup>17</sup> is independently selected at each occurrence from the group: a bond to L<sub>n</sub>, =O, F, Cl, Br, I, -CF<sub>3</sub>, -CN, -CO<sub>2</sub>R<sup>18</sup>, -C(=O)R<sup>18</sup>, -C(=O)N(R<sup>18</sup>)<sub>2</sub>, -CHO, -CH<sub>2</sub>OR<sup>18</sup>, -OC(=O)R<sup>18</sup>, -OC(=O)OR<sup>18a</sup>, -OR<sup>18</sup>, -OC(=O)N(R<sup>18</sup>)<sub>2</sub>, -NR<sup>19</sup>C(=O)R<sup>18</sup>, -NR<sup>19</sup>C(=O)OR<sup>18a</sup>, -NR<sup>19</sup>C(=O)N(R<sup>18</sup>)<sub>2</sub>, -NR<sup>19</sup>SO<sub>2</sub>N(R<sup>18</sup>)<sub>2</sub>, -NR<sup>19</sup>SO<sub>2</sub>R<sup>18a</sup>, -SO<sub>3</sub>H, -SO<sub>2</sub>R<sup>18a</sup>, -SR<sup>18</sup>, -S(=O)R<sup>18a</sup>, -SO<sub>2</sub>N(R<sup>18</sup>)<sub>2</sub>, -N(R<sup>18</sup>)<sub>2</sub>, -NHC(=S)NHR<sup>18</sup>, =NOR<sup>18</sup>, NO<sub>2</sub>, -C(=O)NHOR<sup>18</sup>, -C(=O)NHN(R<sup>18</sup>)R<sup>18a</sup>, -OCH<sub>2</sub>CO<sub>2</sub>H, 2-(1-morpholino)ethoxy, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkylmethyl, C<sub>2</sub>-C<sub>6</sub> alkoxyalkyl, aryl substituted with 0-2 R<sup>18</sup>, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O;

R<sup>18</sup>, R<sup>18a</sup>, and R<sup>19</sup> are independently selected at each occurrence from the group: a bond to L<sub>n</sub>, H, C<sub>1</sub>-C<sub>6</sub> alkyl, phenyl, benzyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, halide, nitro, cyano, and trifluoromethyl;

Pg is a thiol protecting group;

R<sup>20</sup> and R<sup>21</sup> are independently selected from the group: H, C<sub>1</sub>-C<sub>10</sub> alkyl, -CN, -CO<sub>2</sub>R<sup>25</sup>, -C(=O)R<sup>25</sup>, -C(=O)N(R<sup>25</sup>)<sub>2</sub>, C<sub>2</sub>-C<sub>10</sub> 1-alkene substituted with 0-3 R<sup>23</sup>, C<sub>2</sub>-C<sub>10</sub> 1-alkyne substituted with 0-3 R<sup>23</sup>, aryl substituted with 0-3 R<sup>23</sup>, unsaturated 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R<sup>23</sup>, and unsaturated C<sub>3</sub>-10 carbocycle substituted with 0-3 R<sup>23</sup>;

alternatively,  $R^{20}$  and  $R^{21}$ , taken together with the divalent carbon radical to which they are attached form:



$R^{22}$  and  $R^{23}$  are independently selected from the group: H,  $R^{24}$ , C<sub>1</sub>-C<sub>10</sub> alkyl substituted with 0-3  $R^{24}$ , C<sub>2</sub>-C<sub>10</sub> alkenyl substituted with 0-3  $R^{24}$ , C<sub>2</sub>-C<sub>10</sub> alkynyl substituted with 0-3  $R^{24}$ , aryl substituted with 0-3  $R^{24}$ , a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3  $R^{24}$ , and C<sub>3</sub>-10 carbocycle substituted with 0-3  $R^{24}$ ;

alternatively,  $R^{22}$ ,  $R^{23}$  taken together form a fused aromatic or a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O;

**a** and **b** indicate the positions of optional double bonds and **n** is 0 or 1;

$R^{24}$  is independently selected at each occurrence from the group: =O, F, Cl, Br, I, -CF<sub>3</sub>, -CN, -CO<sub>2</sub>R<sup>25</sup>, -C(=O)R<sup>25</sup>, -C(=O)N(R<sup>25</sup>)<sub>2</sub>, -N(R<sup>25</sup>)<sub>3</sub><sup>+</sup>, -CH<sub>2</sub>OR<sup>25</sup>, -OC(=O)R<sup>25</sup>, -OC(=O)OR<sup>25a</sup>, -OR<sup>25</sup>, -OC(=O)N(R<sup>25</sup>)<sub>2</sub>, -NR<sup>26</sup>C(=O)R<sup>25</sup>, -NR<sup>26</sup>C(=O)OR<sup>25a</sup>, -NR<sup>26</sup>C(=O)N(R<sup>25</sup>)<sub>2</sub>, -NR<sup>26</sup>SO<sub>2</sub>N(R<sup>25</sup>)<sub>2</sub>, -NR<sup>26</sup>SO<sub>2</sub>R<sup>25a</sup>, -SO<sub>3</sub>H, -SO<sub>2</sub>R<sup>25a</sup>, -SR<sup>25</sup>, -S(=O)R<sup>25a</sup>, -SO<sub>2</sub>N(R<sup>25</sup>)<sub>2</sub>, -N(R<sup>25</sup>)<sub>2</sub>, =NOR<sup>25</sup>, -C(=O)NHOR<sup>25</sup>, -OCH<sub>2</sub>CO<sub>2</sub>H, and 2-(1-morpholino)ethoxy; and,

$R^{25}$ ,  $R^{25a}$ , and  $R^{26}$  are each independently selected at each occurrence from the group: hydrogen and  $C_1$ - $C_6$  alkyl;  
and a pharmaceutically acceptable salt thereof.

72. (Presently Presented) A composition according to Claim 71 wherein:

L is glycine;

$R^1$  is an amino acid, optionally substituted with a bond to  $L_n$ , independently selected at each occurrence from the group: L-valine, D-valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, tyrosine, phenylalanine, phenylglycine, cyclohexylalanine, homophenylalanine, lysine, ornithine, 1,2-diaminobutyric acid, and 1,2-diaminopropionic acid;

$R^2$  is an amino acid, optionally substituted with a bond to  $L_n$ , independently selected at each occurrence from the group: valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, tyrosine, L-phenylalanine, D-phenylalanine, thienylalanine, phenylglycine, biphenylglycine, cyclohexylalanine, homophenylalanine, L-1-naphthylalanine, D-1-naphthylalanine, lysine, ornithine, 1,2-diaminobutyric acid, 1,2-diaminopropionic acid, and 2-aminothiazole-4-acetic acid;

$R^3$  is an amino acid, optionally substituted with a bond to  $L_n$ , independently selected at each occurrence from the group: D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-tyrosine, D-phenylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-lysine, D-serine, D-ornithine, D-1,2-diaminobutyric acid, and D-1,2-diaminopropionic acid;

R<sup>4</sup> is an amino acid, optionally substituted with a bond to L<sub>n</sub>, independently selected at each occurrence from the group: D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-tyrosine, D-phenylalanine, D-thienylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-ornithine, D-1,2-diaminobutyric acid, D-1,2-diaminopropionic acid, and 2-aminothiazole-4-acetic acid;

R<sup>5</sup> is an amino acid, optionally substituted with a bond to L<sub>n</sub>, independently selected at each occurrence from the group: L-valine, L-alanine, L-leucine, L-isoleucine, L-norleucine, L-2-aminobutyric acid, L-tyrosine, L-phenylalanine, L-thienylalanine, L-phenylglycine, L-cyclohexylalanine, L-homophenylalanine, L-1-naphthylalanine, L-lysine, L-ornithine, L-1,2-diaminobutyric acid, L-1,2-diaminopropionic acid, and 2-aminothiazole-4-acetic acid;

d is selected from 1, 2, and 3;

W is independently selected at each occurrence from the group: O, NH, NHC(=O), C(=O)NH, C(=O), C(=O)O, OC(=O), NHC(=S)NH, NHC(=O)NH, SO<sub>2</sub>, (OCH<sub>2</sub>CH<sub>2</sub>)<sub>s</sub>, (CH<sub>2</sub>CH<sub>2</sub>O)<sub>s'</sub>, (OCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>)<sub>s''</sub>, and (CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>O)<sub>t</sub>,

Z is selected from the group: aryl substituted with 0-1 R<sup>10</sup>, C<sub>3-10</sub> cycloalkyl substituted with 0-1 R<sup>10</sup>, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1 R<sup>10</sup>;

R<sup>6</sup>, R<sup>6a</sup>, R<sup>7</sup>, R<sup>7a</sup>, R<sup>8</sup>, R<sup>8a</sup>, R<sup>9</sup>, and R<sup>9a</sup> are independently selected at each occurrence from the group: H, =O, COOH, SO<sub>3</sub>H, C<sub>1</sub>-C<sub>5</sub> alkyl substituted with 0-1 R<sup>10</sup>, aryl substituted with 0-1 R<sup>10</sup>, benzyl substituted with 0-1 R<sup>10</sup>, and C<sub>1</sub>-C<sub>5</sub> alkoxy substituted

with 0-1  $R^{10}$ ,  $NHC(=O)R^{11}$ ,  $C(=O)NHR^{11}$ ,  $NHC(=O)NHR^{11}$ ,  $NHR^{11}$ ,  $R^{11}$ , and a bond to  $Ch$ ;

$R^{10}$  is independently selected at each occurrence from the group:  $COOR^{11}$ ,  $OH$ ,  $NHR^{11}$ ,  $SO_3H$ , aryl substituted with 0-1  $R^{11}$ , a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1  $R^{11}$ ,  $C_1$ - $C_5$  alkyl substituted with 0-1  $R^{12}$ ,  $C_1$ - $C_5$  alkoxy substituted with 0-1  $R^{12}$ , and a bond to  $Ch$ ;

$R^{11}$  is independently selected at each occurrence from the group: H, aryl substituted with 0-1  $R^{12}$ , a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1  $R^{12}$ , polyalkylene glycol substituted with 0-1  $R^{12}$ , carbohydrate substituted with 0-1  $R^{12}$ , cyclodextrin substituted with 0-1  $R^{12}$ , amino acid substituted with 0-1  $R^{12}$ , and a bond to  $Ch$ ;

$k$  is 0 or 1;

$h$  is 0 or 1;

$h'$  is 0 or 1;

$s$  is selected from 0, 1, 2, 3, 4, and 5;

$s'$  is selected from 0, 1, 2, 3, 4, and 5;

$s''$  is selected from 0, 1, 2, 3, 4, and 5;

$t$  is selected from 0, 1, 2, 3, 4, and 5;

$A^1$ ,  $A^2$ ,  $A^3$ ,  $A^4$ ,  $A^5$ ,  $A^6$ ,  $A^7$ , and  $A^8$  are independently selected at each occurrence from the group:  $NR^{13}$ ,  $NR^{13}R^{14}$ , S, SH, S(Pg), OH, and a bond to  $L_n$ ;

E is a bond, CH, or a spacer group independently selected at each occurrence from the group: C<sub>1</sub>-C<sub>10</sub> alkyl substituted with 0-3 R<sup>17</sup>, aryl substituted with 0-3 R<sup>17</sup>, C<sub>3</sub>-10 cycloalkyl substituted with 0-3 R<sup>17</sup>, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R<sup>17</sup>;

R<sup>13</sup>, and R<sup>14</sup> are each independently selected from the group: a bond to L<sub>n</sub>, hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl substituted with 0-3 R<sup>17</sup>, aryl substituted with 0-3 R<sup>17</sup>, a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R<sup>17</sup>, and an electron, provided that when one of R<sup>13</sup> or R<sup>14</sup> is an electron, then the other is also an electron;

alternatively, R<sup>13</sup> and R<sup>14</sup> combine to form =C(R<sup>20</sup>)(R<sup>21</sup>);

R<sup>17</sup> is independently selected at each occurrence from the group: a bond to L<sub>n</sub>, =O, F, Cl, Br, I, -CF<sub>3</sub>, -CN, -CO<sub>2</sub>R<sup>18</sup>, -C(=O)R<sup>18</sup>, -C(=O)N(R<sup>18</sup>)<sub>2</sub>, -CH<sub>2</sub>OR<sup>18</sup>, -OC(=O)R<sup>18</sup>, -OC(=O)OR<sup>18a</sup>, -OR<sup>18</sup>, -OC(=O)N(R<sup>18</sup>)<sub>2</sub>, -NR<sup>19</sup>C(=O)R<sup>18</sup>, -NR<sup>19</sup>C(=O)OR<sup>18a</sup>, -NR<sup>19</sup>C(=O)N(R<sup>18</sup>)<sub>2</sub>, -NR<sup>19</sup>SO<sub>2</sub>N(R<sup>18</sup>)<sub>2</sub>, -NR<sup>19</sup>SO<sub>2</sub>R<sup>18a</sup>, -SO<sub>3</sub>H, -SO<sub>2</sub>R<sup>18a</sup>, -S(=O)R<sup>18a</sup>, -SO<sub>2</sub>N(R<sup>18</sup>)<sub>2</sub>, -N(R<sup>18</sup>)<sub>2</sub>, -NHC(=S)NHR<sup>18</sup>, =NOR<sup>18</sup>, -C(=O)NHN(R<sup>18</sup>)R<sup>18a</sup>, -OCH<sub>2</sub>CO<sub>2</sub>H, and 2-(1-morpholino)ethoxy;

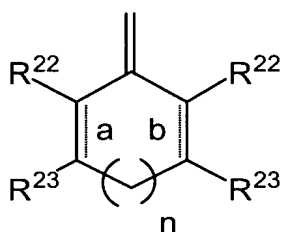
R<sup>18</sup>, R<sup>18a</sup>, and R<sup>19</sup> are independently selected at each occurrence from the group: a bond to L<sub>n</sub>, H, and C<sub>1</sub>-C<sub>6</sub> alkyl;

R<sup>20</sup> and R<sup>21</sup> are independently selected from the group: H, C<sub>1</sub>-C<sub>5</sub> alkyl, -CO<sub>2</sub>R<sup>25</sup>, C<sub>2</sub>-C<sub>5</sub> 1-alkene substituted with 0-3 R<sup>23</sup>, C<sub>2</sub>-C<sub>5</sub> 1-alkyne substituted with 0-3 R<sup>23</sup>, aryl



substituted with 0-3  $R^{23}$ , and unsaturated 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3  $R^{23}$ ;

alternatively,  $R^{20}$  and  $R^{21}$ , taken together with the divalent carbon radical to which they are attached form:



$R^{22}$  and  $R^{23}$  are independently selected from the group: H, and  $R^{24}$ ;

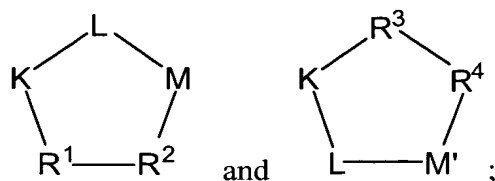
alternatively,  $R^{22}$ ,  $R^{23}$  taken together form a fused aromatic or a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O;

$R^{24}$  is independently selected at each occurrence from the group:  $-\text{CO}_2R^{25}$ ,  $-\text{C}(=\text{O})\text{N}(\text{R}^{25})_2$ ,  $-\text{CH}_2\text{OR}^{25}$ ,  $-\text{OC}(=\text{O})\text{R}^{25}$ ,  $-\text{OR}^{25}$ ,  $-\text{SO}_3\text{H}$ ,  $-\text{N}(\text{R}^{25})_2$ , and  $-\text{OCH}_2\text{CO}_2\text{H}$ ;  
and,

$R^{25}$  is independently selected at each occurrence from the group: H and  $\text{C}_1\text{-C}_3$  alkyl.

73. (Presently Presented) A composition according to Claim 72 wherein:

Q is a peptide selected from the group:



$R^1$  is L-valine, D-valine, D-lysine optionally substituted on the  $\epsilon$  amino group with a bond to  $L_n$  or L-lysine optionally substituted on the  $\epsilon$  amino group with a bond to  $L_n$ ;

$R^2$  is L-phenylalanine, D-phenylalanine, D-1-naphthylalanine, 2-aminothiazole-4-acetic acid, L-lysine optionally substituted on the  $\epsilon$  amino group with a bond to  $L_n$  or tyrosine, the tyrosine optionally substituted on the hydroxy group with a bond to  $L_n$ ;

$R^3$  is D-valine, D-phenylalanine, or L-lysine optionally substituted on the  $\epsilon$  amino group with a bond to  $L_n$ ;

$R^4$  is D-phenylalanine, D-tyrosine substituted on the hydroxy group with a bond to  $L_n$ , or L-lysine optionally substituted on the  $\epsilon$  amino group with a bond to  $L_n$ ;

provided that one of  $R^1$  and  $R^2$  in each Q is substituted with a bond to  $L_n$ , and further provided that when  $R^2$  is 2-aminothiazole-4-acetic acid, K is N-methylarginine;

d is 1 or 2;

W is independently selected at each occurrence from the group:  $\text{NHC}(=\text{O})$ ,  $\text{C}(=\text{O})\text{NH}$ ,  $\text{C}(=\text{O})$ ,  $(\text{CH}_2\text{CH}_2\text{O})_s$ , and  $(\text{CH}_2\text{CH}_2\text{CH}_2\text{O})_t$ ;

$R^6$ ,  $R^{6a}$ ,  $R^7$ ,  $R^{7a}$ ,  $R^8$ ,  $R^{8a}$ ,  $R^9$ , and  $R^{9a}$  are independently selected at each occurrence from the group: H,  $\text{NHC}(=\text{O})R^{11}$ , and a bond to  $\text{C}_h$ ;

k is 0;

$h''$  is selected from 0, 1, 2, and 3;

g is selected from 0, 1, 2, 3, 4, and 5;

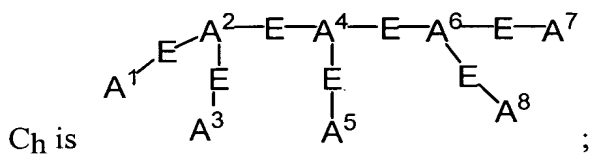
$g'$  is selected from 0, 1, 2, 3, 4, and 5;

$g''$  is selected from 0, 1, 2, 3, 4, and 5;

$g'''$  is selected from 0, 1, 2, 3, 4, and 5;

$s'$  is 1 or 2;

$t$  is 1 or 2;



$A^1$  is selected from the group: OH, and a bond to  $L_n$ ;

$A^2$ ,  $A^4$ , and  $A^6$  are each N;

$A^3$ ,  $A^5$ , and  $A^8$  are each OH;

$A^7$  is a bond to  $L_n$  or NH-bond to  $L_n$ ;

$E$  is a  $C_2$  alkyl substituted with 0-1  $R^{17}$ ;

$R^{17}$  is =O;

alternatively,  $\text{Ch}$  is

;

$A^1$  is  $\text{NH}_2$  or  $\text{N}=\text{C}(\text{R}^{20})(\text{R}^{21})$ ;

$E$  is a bond;

$A^2$  is  $\text{NHR}^{13}$ ;

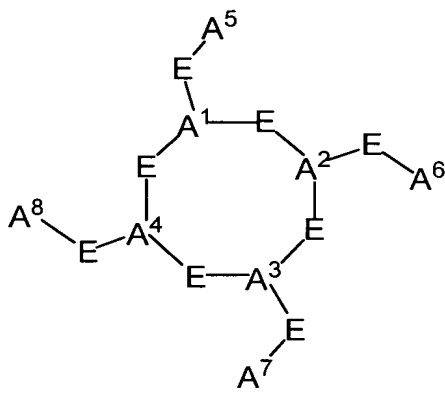
$R^{13}$  is a heterocycle substituted with  $R^{17}$ , the heterocycle being selected from pyridine and pyrimidine;

$R^{17}$  is selected from a bond to  $L_n$ ,  $\text{C}(=\text{O})\text{NHR}^{18}$ , and  $\text{C}(=\text{O})\text{R}^{18}$ ;

$R^{18}$  is a bond to  $L_n$ ;

$R^{24}$  is selected from the group:  $-\text{CO}_2R^{25}$ ,  $-\text{OR}^{25}$ ,  $-\text{SO}_3\text{H}$ , and  $-\text{N}(\text{R}^{25})_2$ ;

$R^{25}$  is independently selected at each occurrence from the group: hydrogen and methyl;



alternatively,  $\text{C}_h$  is

$\text{A}^1$ ,  $\text{A}^2$ ,  $\text{A}^3$ , and  $\text{A}^4$  are each N;

$\text{A}^5$ ,  $\text{A}^6$ , and  $\text{A}^8$  are each OH;

$\text{A}^7$  is a bond to  $L_n$ ;

E is a  $\text{C}_2$  alkyl substituted with 0-1  $\text{R}^{17}$ ; and,

$\text{R}^{17}$  is =O.

74. (Previously Presented) A composition according to Claim 70, wherein the metal is selected from the group:  $^{99\text{m}}\text{Tc}$ ,  $^{95}\text{Tc}$ ,  $^{111}\text{In}$ ,  $^{62}\text{Cu}$ ,  $^{64}\text{Cu}$ ,  $^{67}\text{Ga}$ , and  $^{68}\text{Ga}$ .

75. (Previously Presented) A composition according to Claim 74, further comprising a first ancillary ligand and a second ancillary ligand capable of stabilizing the composition.

76. (Currently Amended) A composition according to Claim 74 comprising a compound selected from the group:

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{Arg-Gly-Asp-D-Tyr}(\text{N}-[[5\text{-[carbonyl]}-2\text{-pyridinyl]diazenido}] \text{-3-aminopropyl})\text{-Val}))$  [**SEQ ID NO.: 33**];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPMS})(\text{cyclo}(\text{Arg-D-Val-D-Tyr}(\text{N}-[[5\text{-[carbonyl]}-2\text{-pyridinyl]diazenido}] \text{-3-aminopropyl})\text{-D-Asp-Gly}))$  [**SEQ ID NO.: 34**];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPDS})(\text{cyclo}(\text{Arg-D-Val-D-Tyr}(\text{N}-[[5\text{-[carbonyl]}-2\text{-pyridinyl]diazenido}] \text{-3-aminopropyl})\text{-D-Asp-Gly}))$  [**SEQ ID NO.: 35**];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{Arg-D-Val-D-Tyr}(\text{N}-[[5\text{-[carbonyl]}-2\text{-pyridinyl]diazenido}] \text{-3-aminopropyl})\text{-D-Asp-Gly}))$  [**SEQ ID NO.: 36**];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{Arg-Gly-Asp-D-Phe-Lys}(\text{N}-[[5\text{-[carbonyl]}-2\text{-pyridinyl]diazenido}]]))$  [**SEQ ID NO.: 37**];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{Arg-Gly-Asp-D-Tyr-Lys}(\text{N}-[[5\text{-[carbonyl]}-2\text{-pyridinyl]diazenido}]]))$  [**SEQ ID NO.: 38**];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})([2-[[[5\text{-[carbonyl]}-2\text{-pyridinyl]hydrazono}]methyl\text{-benzenesulfonic acid}]\text{-Phe-Glu}(\text{cyclo}\{\text{Lys-Arg-Gly-Asp-D-Phe}\})\text{-cyclo}\{\text{Lys-Arg-Gly-Asp-D-Phe}\}))$  [**SEQ ID NO.: 39**];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}\{\text{Arg-Gly-Asp-D-Nal-Lys}([2-[[[5\text{-[carbonyl]}-2\text{-pyridinyl]hydrazono}]methyl\text{-benzenesulfonic acid}]]))$  [**SEQ ID NO.: 40**];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})([2-[[[5\text{-[carbonyl]}-2\text{-pyridinyl]hydrazono}]methyl\text{-benzenesulfonic acid}]\text{-Glu}(\text{cyclo}\{\text{Lys-Arg-Gly-Asp-D-Nal}\})\text{-cyclo}\{\text{Lys-Arg-Gly-Asp-D-Nal}\}))$  [**SEQ ID NO.: 41**];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{Arg-Gly-Asp-D-Tyr}((\text{N}-[[5-\text{[carbonyl]}-2\text{-pyridinyl]diazenido}] - 18\text{-amino-14-aza-4,7,10-oxy-15-oxo-octadecoyl})-3\text{-aminopropyl})-\text{Val}))$   
[SEQ ID NO.: 42];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{N}-[[5-\text{[carbonyl]}-2\text{-pyridinyl]diazenido}]-\text{Glu}(\text{O-cyclo}(\text{Lys-Arg-Gly-Asp-D-Phe}))- \text{O-cyclo}(\text{Lys-Arg-Gly-Asp-D-Phe}))$  [SEQ ID NO.: 43];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{N}-[[5-\text{[carbonyl]}-2\text{-pyridinyl]diazenido}]-\text{Glu}(\text{O-cyclo}(\text{D-Tyr}(3\text{-aminopropyl})-\text{Val-Arg-Gly-Asp}))- \text{O-cyclo}(\text{D-Tyr}(3\text{-aminopropyl})-\text{Val-Arg-Gly-Asp}))$   
[SEQ ID NO.: 44];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{Arg-Gly-Asp-Lys}(\text{N}-[[5-\text{[carbonyl]}-2\text{-pyridinyl]diazenido}]]-\text{D-Val}))$  [SEQ ID NO.: 45];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}\{\text{D-Lys}([2-[[[5-\text{[carbonyl]}-2\text{-pyridinyl]hydrazono}]methyl]-\text{benzenesulfonic acid}]]-\text{D-Phe-D-Asp-Gly-Arg})\})$  [SEQ ID NO.: 46];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})([2-[[[5-\text{[carbonyl]}-2\text{-pyridinyl]hydrazono}]methyl]-\text{benzenesulfonic acid}]-\text{Glu}(\text{cyclo}\{\text{D-Lys-D-Phe-D-Asp-Gly-Arg}\})-\text{cyclo}\{\text{D-Lys-D-Phe-D-Asp-Gly-Arg}\}))$  [SEQ ID NO.: 47];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}\{\text{D-Phe-D-Lys}([2-[[[5-\text{[carbonyl]}-2\text{-pyridinyl]hydrazono}]methyl]-\text{benzenesulfonic acid}]]-\text{D-Asp-Gly-Arg})\})$  [SEQ ID NO.: 48];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{N-Me-Arg-Gly-Asp-ATA-D-Lys}(\text{N}-[[5-\text{[carbonyl]}-2\text{-pyridinyl]diazenido}]])))$  [SEQ ID NO.: 49];

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}\{\text{Cit-Gly-Asp-D-Phe-Lys}([2-[[[5-\text{[carbonyl]}-2\text{-pyridinyl]hydrazono}]methyl]-\text{benzenesulfonic acid}]]))\})$  [SEQ ID NO.: 50];

$^{99m}\text{Tc}(\text{tricine})(1,2,4\text{-triazole})(\text{cyclo}(\text{Arg-Gly-Asp-D-Tyr}(\text{N}-[[5\text{-[carbonyl]}-2\text{-pyridinyl]diazenido}] \text{-3-aminopropyl})\text{-Val}))$  [SEQ ID NO.: 51];

$(\text{DOTA-}^{111}\text{In})\text{-Glu}(\text{cyclo}\{\text{Lys-Arg-Gly-Asp-D-Phe}\})\text{-cyclo}\{\text{Lys-Arg-Gly-Asp-D-Phe}\}$  [SEQ ID NO.: 52];

$\text{cyclo}(\text{Arg-Gly-Asp-D-Phe-Lys}(\text{DTPA-}^{111}\text{In}))$  [SEQ ID NO.: 53]; and

$\text{cyclo}(\text{Arg-Gly-Asp-D-Phe-Lys})_2(\text{DTPA-}^{111}\text{In})$  [SEQ ID NO.: 54].

77. (Previously Presented) A composition according to Claim 70, wherein the metal is selected from the group:  $^{33}\text{P}$ ,  $^{125}\text{I}$ ,  $^{186}\text{Re}$ ,  $^{188}\text{Re}$ ,  $^{153}\text{Sm}$ ,  $^{166}\text{Ho}$ ,  $^{177}\text{Lu}$ ,  $^{149}\text{Pm}$ ,  $^{90}\text{Y}$ ,  $^{212}\text{Bi}$ ,  $^{103}\text{Pd}$ ,  $^{109}\text{Pd}$ ,  $^{159}\text{Gd}$ ,  $^{140}\text{La}$ ,  $^{198}\text{Au}$ ,  $^{199}\text{Au}$ ,  $^{169}\text{Yb}$ ,  $^{175}\text{Yb}$ ,  $^{165}\text{Dy}$ ,  $^{166}\text{Dy}$ ,  $^{67}\text{Cu}$ ,  $^{105}\text{Rh}$ ,  $^{111}\text{Ag}$ , and  $^{192}\text{Ir}$ .

78. (Currently Amended) A composition according to Claim 77 comprising a compound selected from the group:

$\text{cyclo}(\text{Arg-Gly-Asp-D-Phe-Lys}(\text{DTPA-}^{153}\text{Sm}))$  [SEQ ID NO.: 55];

$\text{cyclo}(\text{Arg-Gly-Asp-D-Phe-Lys})_2(\text{DTPA-}^{153}\text{Sm})$  [SEQ ID NO.: 56];

$\text{cyclo}(\text{Arg-Gly-Asp-D-Tyr}(\text{N-DTPA}(\text{DTPA-}^{153}\text{Sm})\text{-3-aminopropyl})\text{-Val})$  [SEQ ID NO.: 57];

$\text{cyclo}(\text{Arg-Gly-Asp-D-Phe-Lys}(\text{DTPA-}^{177}\text{Lu}))$  [SEQ ID NO.: 58];

$(\text{DOTA-}^{177}\text{Lu})\text{-Glu}(\text{cyclo}\{\text{Lys-Arg-Gly-Asp-D-Phe}\})\text{-cyclo}\{\text{Lys-Arg-Gly-Asp-D-Phe}\}$  [SEQ ID NO.: 59];

cyclo(Arg-Gly-Asp-D-Phe-Lys)<sub>2</sub>(DTPA-<sup>177</sup>Lu) [SEQ ID NO.: 60];

cyclo(Arg-Gly-Asp-D-Tyr(N-DTPA(<sup>177</sup>Lu)-3-aminopropyl)-Val) [SEQ ID NO.: 61]; and

(DOTA-<sup>90</sup>Y)-Glu(cyclo{Lys-Arg-Gly-Asp-D-Phe})-cyclo{Lys-Arg-Gly-Asp-D-Phe} [SEQ ID NO.: 62].

79. (Previously Presented) A composition according to Claim 70, wherein the metal is selected from the group: Gd(III), Dy(III), Fe(III), and Mn(II).

80. (Currently Amended) A composition according to Claim 79 wherein the compound is:

cyclo(Arg-Gly-Asp-D-Tyr(N-DTPA(Gd(III))-3-aminopropyl)-Val) [SEQ ID NO.: 63].

81. (Previously Presented) A composition according to Claim 70, wherein the metal is selected from the group: Re, Sm, Ho, Lu, Pm, Y, Bi, Pd, Gd, La, Au, Au, Yb, Dy, Cu, Rh, Ag, and Ir.

82. (Previously Presented) A composition according to Claim 70, further comprising a therapeutic isotope selected from the group: <sup>35</sup>S, <sup>32</sup>P, <sup>125</sup>I, <sup>131</sup>I, and <sup>211</sup>At.

83. (Currently Amended) A method of treating cancer in a patient, comprising:

administering a radiopharmaceutical comprising:

(i) a metal;



(ii) ~~at least one agent selected from the group consisting of~~ a chemotherapeutic agent ~~and a radiosensitizer agent~~, or a pharmaceutically acceptable salt thereof;

(iii) a peptide or peptidomimetic targeting moiety that binds to  $\alpha_5\beta_1$  receptor, and a chelator, wherein the targeting moiety is bound to the chelator and the compound has 0-1 linking groups between the targeting moiety and chelator, or a pharmaceutically acceptable salt thereof; and

(iv) a pharmaceutically acceptable carrier, to a patient.